



Mapping fire danger impacts on the tourism sector of the Mediterranean islands blue economy under climate change

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The EU H2020 Project SOCLIMPACT (<http://soclimpact.org>) aims at the modelling of climate change effects and their socioeconomic impacts on European islands for the 21st century, in the context of the EU Blue Economy sectors (aquaculture, tourism, maritime transport and marine energy). The development of a thorough understanding of how climate change will affect the EU islands will contribute to the improvement of the economic valuation of the climate induced impacts delivering accurate information to policy makers and other relevant stakeholders, thus, facilitating the resilience capacity of these vulnerable lands.

In the framework of the climate induced impacts on tourism sector, we investigate the spatial and temporal distribution of forest fire danger focusing on the Mediterranean islands, using the fire weather index (FWI) as climate hazard indicator. The FWI uses sub-daily data (temperature, relative humidity, precipitation and wind speed), which for the present study are derived from the state-of-the-art RCMs of the EURO-CORDEX branch (<http://www.euro-cordex.net/>) of the CORDEX initiative on high horizontal resolution of 11km and for two IPCC RCPs; i.e. RCP2.6 and RCP8.5. Further processing of the climatic data is implemented in order to obtain the appropriate spatial resolution of the climatic data for each island, providing information on local and regional scale.

The forest fires impact on tourism sector is then quantified along the impact chain concept, based on the IPCC AR5 climate risk concept, which is a highly participative, holistic approach to understand and to achieve a shared perspective on climate risks. It synthesizes relationships between exposure to climate hazards, vulnerability composed of sensitivity related to physical and socio-economic features, and adaptive capacity factors with the involvement of local experts and key stakeholders (GIZ et al. 2018).

From the inter-comparison of the modelled fire danger among the islands, it is found that the danger increases from west to east and from north to south, while the exposure and vulnerability information is not uniform for among the islands. These stresses the diverse needs of adaptation across the Mediterranean, while possible common messages related to the projected future changes can be identified, facilitating climate-related policy decision making for the Blue Growth tourism sector.

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